

5 I claim:

1. A fast response flow control valve/nozzle for a high-speed fire protection/suppression system, comprising:

a base defining the outer walls of an internal chamber and comprising internal threads at a first end, external threads at said first end, and at least two mounting ports proximate said first 10 end in fluid communication with said internal chamber;

a jet core defining the inner walls of an internal chamber and comprising external threads at a first end, said external threads at said first end being releasably attached to said internal threads at said first end of said base;

a frangible disc proximate said first end of said jet core and said first end of said base;

15 a retention ring releasably attached at said first end of said base, whereby said frangible disc is positioned between said retention ring and said first end of said jet core;

a nozzle port defining a central bore and comprising internal threads at a first end, said internal threads at said first end being releasably attached to said external threads at said first end of said base, thereby enclosing said jet core, said frangible disc, and said retention ring within 20 said internal chamber of said nozzle port and said internal chamber of said base; and

an actuator releasably attached to said base at one of said two or more mounting ports; whereby initiation of said actuator creates a localized pressure wave sufficient to rupture said frangible disc to release a fire suppressing material.

25 2. The fast response flow control valve/nozzle according to claim 1 wherein said base further comprises internal threads at a second end for connection of said valve/nozzle to a source

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of fire suppressing material.

3. The fast response flow control valve/nozzle according to claim 1 wherein said base further comprises a plurality of key pin holes located around the periphery of said first end.

10 4. The fast response flow control valve/nozzle according to claim 3 wherein said base is fabricated of stainless steel.

15 5. The fast response flow control valve/nozzle according to claim 1 wherein said jet core further comprises a plurality of channels in fluid communication between an external surface and said first end, whereby said plurality of channels establishes fluid communication between said mounting ports in said base and said frangible disc.

20 6. The fast response flow control valve/nozzle according to claim 5 wherein said jet core is fabricated of stainless steel.

7. The fast response flow control valve/nozzle according to claim 5 wherein said frangible disc is in fluid communication with said plurality of channels in said jet core

25 8. The fast response flow control valve/nozzle according to claim 7 wherein said frangible disc comprises a base fixedly attached to a spherically curved disc.

5 9. The fast response flow control valve/nozzle according to claim 8 wherein said base and
said spherically curved disc are fabricated of stainless steel.

10 10. The fast response flow control valve/nozzle according to claim 3 wherein said
retention ring further comprises a plurality of key pins located around its periphery, said plurality
of key pins being located to align and slidably engage said key pin holes in said first end of said
base, thereby holding said frangible disc in position between said retention ring and said jet core.

15 11. The fast response flow control valve/nozzle according to claim 10 wherein said
retention ring is fabricated of stainless steel.

16 12. The fast response flow control valve/nozzle according to claim 1 wherein said nozzle
port further comprises internal threads at a second end for connection of said valve/nozzle to a
dispersing nozzle for the fire suppressing material.

20 13. The fast response flow control valve/nozzle according to claim 12 wherein said
nozzle port is fabricated of stainless steel.